Paper No. 20

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte GERALD J. NACAMULI, ROBERT A. INNES,
and ARNOLD J. GLOYN

Appeal No. 1998-1067
Application No. 08/273,933

ON BRIEF

Before GARRIS, WALTZ, and LIEBERMAN, Administrative Patent Judges.

GARRIS, Administrative Patent Judge.

DECISION ON APPEAL

This is a decision on an appeal from the refusal of the examiner to allow claims 31, 32 and 34-50 as amended subsequent to the final rejection. These are all of the claims remaining in the application.

The subject matter on appeal relates to a process for the production of a benzene, toluene and xylene containing product which contains a reduced amount of close-boiling non-aromatics. The process includes the step of contacting a toluene containing feed which includes about 0.2 wt.% to about 5 wt.% close-boiling non-aromatics in a disproportionation zone with an acidic para-selective molecular sieve catalyst under conditions such that the product contains a reduced amount of close-boiling non-aromatics compared to the feed and such that at least 40% of the xylene produced is para-xylene. Further details of this appealed subject matter are set forth in representative independent claim 31 which reads as follows:

31. A process for the production of a benzene, toluene and xylene containing product which contains a reduced amount of close-boiling non-aromatics, comprising:

(a) aromatizing a predominantly paraffinic feedstock in an aromatization zone over a substantially nonacidic aromatization catalyst comprising a Group VIII metal on a molecular sieve support to produce an aromatization product which comprises a toluene containing feed which comprises at least about 70% toluene and from at least about 0.2 wt% to about 5 wt% close-boiling non-aromatics;

(b) contacting the toluene containing feed in a disproportionation zone with an acidic para-selective molecular sieve catalyst under conditions such that the product contains a reduced amount of close-boiling non-aromatic compared to the feed and

such that at least 40% of the xylene produced is para-xylene; and

(c) separating the product by distillation to recover at least benzene and xylene fractions, each of which contain less than 0.5 wt% close-boiling non-aromatic impurities.

The references relied upon by the examiner as evidence of obviousness are:

Bonacci et al. (Bonacci)	3,957,621	May 18, 1976
Kaeding	4,016,219	Apr. 5, 1977
Butter	4,067,919	Jan. 10, 1978
Haag et al. (Haag)	4,097,543	Jun. 27, 1978

All of the appealed claims are rejected under 35 U.S.C. § 103 as being unpatentable over Bonacci and Butter combined with Kaeding and Haag. In the paragraph bridging pages 7 and 8 of the final office action (i.e., Paper No. 8), the examiner expresses his obviousness conclusion in the following manner:

> Therefore, in view of the difference(s) between the subject matter **as a whole** sought to be patented and the **totality** of the teaching(s) of prior art, as established above, it would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains, to follow the teachings of Bonacci (3,957,621) and Butter (4,067,919) combined with Kaeding (4,016,219) and Haag(4,097,543), and practice the same process with any toluene feed stock, optionally containing other close boiling non-aromatics (paraffins etc.) and use the same catalyst for the conversion and call the process

> "para-selective". The consequent reduction of the non-aromatics would have been expected since the same conditions and catalysts are used for the aromatization of the non-aromatics.
>
> This rejection cannot be sustained.

As correctly argued by the appellants in their brief and supported by the section 1.132 Mulaskey declaration of record, the applied prior art contains no teaching or suggestion of step (b) recited in appealed independent claim 31. More specifically, the applied references contain no teaching or suggestion of using an acidic para-selective molecular sieve catalyst in a disproportionation zone under conditions such that the product contains a reduced amount of close-boiling non-aromatics and such that at least 40% of the xylene produced is para-xylene as required in this step. We recognize that certain of these references disclose using such a catalyst in a disproportionation zone for producing para-xylene. However, these references contain no suggestion of also reducing the amount of close- boiling non-aromatics as here claimed.

From our perspective, the examiner's contrary view is based fundamentally on conjecture and speculation. For example, the examiner contends that the catalyst of Bonacci would necessarily become para-selective during use and that close-boiling non-aromatics contacting this catalyst would necessarily be reduced in amount. It is our view, however, that the record before us does not support this contention.

Even if the applied references were combined in such a manner as to result in use of a para-selective catalyst in the disproportionation zone of Bonacci, we agree with the appellants' argument that the here claimed process would not be achieved. This is because the applied references simply contain no teaching or suggestion of effecting contact in the disproportionation zone under conditions such that the product contains a reduced amount of close-boiling non-aromatics as required in step (b) of the independent claim on appeal. As correctly and repeatedly argued by the appellants in their brief, it is only their own disclosure which teaches how to achieve this reduction while also producing para-xylene as here claimed.

In light of the foregoing, we cannot sustain the examiner's rejection of the appealed claims as being unpatentable over Bonacci and Butter combined with Kaeding and Haag.

The decision of the examiner is reversed.

REVERSED

Bradley R. Garris Administrative Patent Judge	)	
Thomas A. Waltz Administrative Patent Judge	)	BOARD OF PATENT APPEALS AND INTERFERENCES
Paul Lieberman Administrative Patent Judge	)	

BRG:tdl

Thomas G. Dejonghe
Chevron Corporation
Law Department, Patent Division
P.O. Box 7141
San Francisco, CA 94120-7141